

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

APPLICANT: Stephen Lawrence et al.  
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Article Information  
EXAMINER: Paul Kim  
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Dated: July 25, 2008

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**APPEAL BRIEF**

Pursuant to the requirements of 37 C.F.R. § 41.37, please consider this document as the Appellants' Brief in the present application currently before the Board of Patent Appeals and Interferences (hereinafter "the Board").

## **I. REAL PARTY IN INTEREST**

The real party in interest in the present application is Google Inc., assignee of all rights and interests in the present application. Assignment to Google Inc. from the inventors, Stephen R. Lawrence, Omar Khan, and Nikhil Bhatla was recorded in the United States Patent and Trademark Office on November 1, 2004, at Reel 015937, Frame 0607.

## **II. RELATED APPEALS AND INTERFERENCES**

To the best knowledge of the Appellants and the Appellants' legal representative, there are no other appeals or interferences that will directly affect, be affected by, or have a bearing on the decision of the Board in the present appeal.

## **III. STATUS OF CLAIMS**

Claims 25, 54, and 62-105 are currently pending in the present application. These claims were rejected in the Final Office Action of December 27, 2007.<sup>1</sup> Specifically, claims 25, 54, 62-63, 71, 80, 83-84, 92, 101, and 104-105 were rejected under 35 USC § 102(b) as allegedly being anticipated by Uchiyama, U.S. Patent Publication No. 2002/0065802 (hereinafter "Uchiyama"). Claims 64-70, 72-79, 81-82, 85-91, 93-100, and 102-103 were rejected under 35 USC § 102(b) as allegedly being unpatentable over Uchiyama in view of Official Notice. Claims 1-3, 27-32, and 56-61 are withdrawn, and claims 4-24, 26, 33-53, and 55 are canceled.

The rejection of claims 25, 54, and 62-105 is hereby appealed.

## **IV. STATUS OF AMENDMENTS**

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<sup>1</sup> Claims 26 and 55, also listed as rejected, had previously been canceled.

All claim amendments submitted to the Examiner during prosecution of the present application have been entered. The claims involved in the present appeal are presented in Section VIII.

## **V. SUMMARY OF CLAIMED SUBJECT MATTER**

In general, embodiments of the claimed invention arrange an article in a search result of a search query based at least in part on a predetermined client behavior score associated with the relevant article. The predetermined client behavior score was calculated based at least in part on client-side behavior data associated with the article, and stored in a data store in association with the article.

### **1. Independent Claim 25**

Independent claim 25 is directed to a method comprising:

- (i) determining client-side behavior data associated with an article (*See, e.g.,* Specification, paragraphs 0023, 0007, 0018);
- (ii) providing the client-side behavior data associated with the article to a ranking processor (*See, e.g.,* Specification, paragraph 0022);
- (iii) calculating a predetermined client behavior score for the article based at least in part on the client-side behavior data associated with the article (*See, e.g.,* Specification, paragraphs 0023, 0019);
- (iv) storing the predetermined client behavior score in a data store, wherein the data store associates the predetermined client behavior score with the article (*See, e.g.,* Specification, paragraphs 0026, 0065);
- (v) receiving a search query (*See, e.g.,* Specification, paragraph 0020);
- (vi) determining that the article is associated with the search query (*See, e.g.,* Specification, paragraph 0022);

- (vii) receiving from the data store the predetermined client behavior score associated with the article (*See, e.g.*, Specification, paragraph 0065);
- (viii) arranging the article in a search result of the search query based at least in part on the predetermined client behavior score associated with the relevant article (*See, e.g.*, Specification, paragraphs 0071, 0065); and
- (ix) displaying at least a part of the search result to a user (*See, e.g.*, Specification, paragraph 0072).

## 2. Independent Claim 54

Independent claim 54 is directed to a computer-readable medium containing program code comprising:

- (i) program code for determining client-side behavior data associated with an article (*See, e.g.*, Specification, paragraphs 0023, 0007, 0018);
- (ii) program code for providing the client-side behavior data associated with the article to a ranking processor (*See, e.g.*, Specification, paragraph 0022);
- (iii) program code for calculating a predetermined client behavior score for the article based at least in part on the client-side behavior data associated with the article (*See, e.g.*, Specification, paragraphs 0023, 0019);
- (iv) program code for storing the predetermined client behavior score in a data store, wherein the data store associates the predetermined client behavior score with the article (*See, e.g.*, Specification, paragraphs 0026, 0065);
- (v) program code for receiving a search query (*See, e.g.*, Specification, paragraph 0020);
- (vi) program code for determining that the article is associated with the search query (*See, e.g.*, Specification, paragraph 0022);
- (vii) program code for receiving from the data store the predetermined client behavior score associated with the article (*See, e.g.*, Specification, paragraph 0065);
- (viii) program code for arranging the article in a search result of the search query based at least in part on the predetermined client behavior score associated with the relevant article (*See, e.g.*, Specification, paragraphs 0071, 0065); and

- (ix) program code for displaying at least a part of the search result to a user (*See, e.g., Specification, paragraph 0072*).

### 3. Independent Claim 104

Independent claim 104 is directed to a method to order a set of articles, comprising:

- (i) determining client-side behavior data associated with an article (*See, e.g., Specification, paragraphs 0023, 0007, 0018*);
- (ii) providing the client-side behavior data associated with the article to a ranking processor (*See, e.g., Specification, paragraph 0022*);
- (iii) calculating a predetermined client behavior score for the article based at least in part on the client-side behavior data associated with the article (*See, e.g., Specification, paragraphs 0023, 0019*);
- (iv) storing the predetermined client behavior score in a data store, wherein the data store associates the predetermined client behavior score with the article (*See, e.g., Specification, paragraphs 0026, 0065*);
- (v) determining a set of relevant articles relevant to a query signal, the set of relevant articles including the article (*See, e.g., Specification, paragraph 0022*);
- (vi) receiving from the data store the predetermined client behavior score associated with the article (*See, e.g., Specification, paragraph 0065*);
- (vii) arranging the set of relevant articles in an order based at least in part on the predetermined client behavior score associated with the article (*See, e.g., Specification, paragraphs 0071, 0065*); and
- (viii) displaying at least a part of the set of relevant articles to a user in the order (*See, e.g., Specification, paragraph 0072*).

### 4. Independent Claim 105

Independent claim 105 is directed to a method to order search results, comprising:

- (i) determining client-side behavior data associated with an article stored in a client device (*See, e.g.,* Specification, paragraphs 0023, 0007, 0018, 0017);
- (ii) providing the client-side behavior data associated with the article to a ranking processor (*See, e.g.,* Specification, paragraph 0022);
- (iii) calculating a predetermined client behavior score for the article based at least in part on the client-side behavior data associated with the article (*See, e.g.,* Specification, paragraphs 0023, 0019);
- (iv) storing the predetermined client behavior score in a data store in the client device, wherein the data store associates the predetermined client behavior score with the article (*See, e.g.,* Specification, paragraphs 0026, 0065);
- (v) receiving a search query (*See, e.g.,* Specification, paragraph 0020);
- (vi) determining that the article is associated with the search query (*See, e.g.,* Specification, paragraph 0022);
- (vii) receiving from the data store the predetermined client behavior score associated with the article (*See, e.g.,* Specification, paragraph 0065);
- (viii) arranging the article in a search result of the search query in an order based at least in part on the predetermined client behavior score associated with the article (*See, e.g.,* Specification, paragraphs 0071, 0065); and
- (ix) displaying at least a part of the search result to a user in the order (*See, e.g.,* Specification, paragraph 0072).

## **VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

The grounds of rejection presented for review in the present appeal are as follows:

1. Whether Uchiyama anticipates claims 25, 54, 62-63, 71, 80, 83-84, 92, 101, and 104 under 35 U.S.C. § 102(b).
2. Whether Uchiyama anticipates claim 105 under 35 U.S.C. § 102(b).
3. Whether Uchiyama and the Examiner's "Official Notice" render claims 64-70, 72-79, 81-82, 85-91, 93-100, and 102-103 obvious under 35 U.S.C. § 103(a).

## VII. ARGUMENT

### A. *Uchiyama Fails to Disclose Each and Every Limitation of Claims 25, 54, 62-63, 71, 80, 83-84, 92, 101, and 104*

Under 35 U.S.C. § 102, “[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” See *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987); 35 U.S.C. § 102; MPEP § 2131. Farnham fails to disclose each and every limitation of the claimed invention.

In general, embodiments of the claimed invention arrange an article in a search result of a search query. More specifically, the arranging is based at least in part on a predetermined client behavior score associated with the relevant article, where the predetermined client behavior score was calculated based at least in part on client-side behavior data associated with the article, and stored in a data store in association with the article. Thus, independent claim 25, for example, recites, in part, a method comprising:

- determining client-side behavior data associated with an article;
- ...
- calculating a predetermined client behavior score for the article based at least in part on the client-side behavior data associated with the article;
- storing the predetermined client behavior score in a data store, wherein the data store associates the predetermined client behavior score with the article;
- receiving a search query;
- receiving from the data store the predetermined client behavior score associated with the article;
- receiving from the data store the predetermined client behavior score associated with the article;
- arranging the article in a search result of the search query based at least in part on the predetermined client behavior score associated with the relevant article
- ...

Thus, the claimed invention recites “calculating a predetermined client behavior score for the article based at least in part on the client-side behavior data associated with the article,”

“storing the predetermined client behavior score in a data store” in association with the article, and “arranging the article in a search result of the search query based at least in part on the predetermined client behavior score.” Further, at query time the predetermined client behavior score associated with the article is received from the data store and used to arrange the article in the search result.

Uchiyama fails to disclose calculating a predetermined client behavior score for an article based on client-side behavior data associated with the article. Rather, Uchiyama discloses a system that collects user data from a range of remote resources to accumulate a database of human input information. (Uchiyama, Abstract and paragraph 0011). More specifically, Uchiyama discloses collecting data from users’ terminals and transmitting the data to a central server, and the data in the central server are subsequently used to provide customized search results. (Uchiyama, paragraphs 0079 and 0092). However, Uchiyama fails to disclose or suggest calculating a **predetermined client behavior score** for an article.

In his Response to Arguments on page 7 of the Final Office Action of December 27th, 2008, the Examiner responded to Appellants’ observation that Uchiyama fails to disclose a predetermined client behavior score by citing Uchiyama paragraph 0061, which states that data collected may include URLs visited and duration of time spent at each site. However, neither URLs visited nor duration of time spent at a site constitutes the claimed predetermined client behavior score for an article. First, URLs visited are not even slightly analogous to a “score;” rather, at best they could only be considered Boolean values specifying whether a given URL was visited or not. Second, a duration of time spent at a site, even assuming for the sake of argument that it were considered a score, would still not be a score “for the article”; rather, it



relates to a site in the aggregate, and not to a particular article, e.g. to a particular document or web page of the web site.

The Examiner further states in the Final Office Action of December 27th that Uchiyama paragraph 0022 discloses that relevant information is collected on the client side during browsing sessions and transmitted to the central server. The Examiner also states that Uchiyama paragraphs 0073 and 0083 disclose that such data is used to determine a relevancy score for an article and that the article is thereafter ranked accordingly in the return of search results. However, none of these paragraphs discloses the claimed “predetermined client behavior score” that is stored in a data store. For example, paragraph 0073 states that user profile data may be accessed to provide customized rankings of search results or targeted site recommendations, but such use of use of user profile data is of no relevance since there is no suggestion that the user profile contains a **predetermined client behavior score** associated with an article. Paragraph 0083 merely discloses that keywords, explicitly identified by a user as being of interest, may be used to adjust keyword weightings. However, such explicitly identified keywords plainly cannot constitute client-side behavior data **associated with an article**, on which a predetermined client behavior score can be based, since the keywords are associated only with a user, rather than with individual articles.

Thus, since Uchiyama fails to disclose the claimed “predetermined client behavior score” for an article, it cannot anticipate independent claim 25.

Independent claims 54 and 104 also recite calculating the “predetermined client behavior score,” storing it in a data store in association with the article, receiving a search query and receiving the score from the data store, and arranging an article in a search result based at least in part on the score, and are thus likewise not anticipated by Uchiyama for at least the same reasons

discussed above with respect to independent claim 25.

Claims 62-63, 71, 80, 83-84, 92, and 101 depend, directly or indirectly, from either independent claim 25 or 54, and are thus patentably distinguishable from the cited references for at least the same reasons discussed above.

*B. Uchiyama Fails to Disclose Each and Every Limitation of Claim 105*

Independent claim 105 also recites calculating the “predetermined client behavior score,” storing it in a data store in association with the article, receiving a search query and receiving the score from the data store, and arranging an article in a search result based at least in part on the score, and is thus likewise not anticipated by Uchiyama for at least the same reasons discussed above with respect to independent claim 25.

Claim 105 also recites additional limitations regarding the client device. Specifically, claim 105 recites a method to order search results, comprising:

**determining client-side behavior data associated with an article stored in a client device;**  
providing the client-side behavior data associated with the article to a ranking processor;  
calculating a predetermined client behavior score for the article based at least in part on the client-side behavior data associated with the article;  
storing the predetermined client behavior score in a data store in the client device, wherein the data store associates the predetermined client behavior score with the article;  
...

Thus, the article with which the behavior data is associated, as well as the data store containing the predetermined client behavior score, is stored in a client device. This enables, for example, the ability to do quick and effective searches of the local client system based on the client-side behavior data associated with articles stored on the client.

Uchiyama deals with monitoring a user’s browsing activity with respect to remote web

sites and aggregating the resulting data on a server. However, as discussed further below, Uchiyama does not disclose that articles associated with the monitored browsing are stored in a client device.

In the Final Office Action, the Examiner grouped claim 105 with claims 25, 54, and 104 and rejected all four claims as allegedly anticipated by Uchiyama based on an analysis of claim 25. However, as noted by Appellants in a Request for Reconsideration submitted in response to the Final Office Action, neither claims 25, 54, nor 104 recited the client device features at issue.

In response, the Examiner issued an Advisory Action replying that “the article and the client-side behavior may be stored in the central server (i.e. a client device).” However, such an interpretation fails to support a rejection under § 102. Even if the Uchiyama central server were accepted to be a “client device,” it would still not store an article with which client-side behavior data is associated, as claimed. Indeed, Uchiyama nowhere discloses that it does so. Rather, the only discussion of the Uchiyama central server relates to its data aggregating function, i.e. collecting and processing the data monitored on the client side. In each of Uchiyama’s Figures 1-4, it is depicted as separate and distinct from e.g. web sites, web servers, and other devices storing articles. Nor is it inherent that the Uchiyama central server stores such articles, since there is no reason that it would do so. Indeed, since the only noted purpose of the Uchiyama central server is to aggregate data on browsing or other usage data, it would be entirely unnecessary for it to additionally store the actual articles with which client-side behavior data is associated. Thus, since it is neither express nor inherent that the Uchiyama central server stores an article with which client-side behavior data is associated, the rejection of claim 105 under § 102 is legal error for these additional reasons.

C. *Claims 64-70, 72-79, 81-82, 85-91, 93-100, and 102-103 are Patentable over Uchiyama and Official Notice*

Claims 64 and 85 recite that the client-side behavior data associated with the article comprises scrolling activity data, and additionally recite—via the incorporation of their respective parent claims 25 and 54—that such client-side behavior data is used to calculate a predetermined client behavior score for the article. Claims 65-67, 71-79, 85-88, and 92-100 recite other types of client-side behavior data that are used to calculate the predetermined client behavior score, and claims 68-70 and 89-91 recite that computer program application data is used in connection with additional client-side behavior data. Claims 80-81 and 101-103 recite determining a combined score based at least in part on client-side behavior data for multiple users. The Examiner rejected all of these claims by taking Official Notice that the recited features would have been obvious and widely-known to those of ordinary skill in the art.

First, note that claims 70, 72-79, 81-82, 85-91, 93-100, and 102-103 all depend, directly or indirectly, from either independent claim 25 or 54, and are thus patentably distinguishable from the cited references for at least the same reasons discussed above with respect to claims 25 and 54.

Additionally, as argued by Appellants in the Response of October 9, 2007, the Examiner's official notice is inadequate. As noted by the court in *In re Ahlert*, the notice of facts beyond the record which may be taken by the examiner must be "capable of such instant and unquestionable demonstration as to defy dispute." *In re Ahlert*, 424 F.2d 1088, 1091, 165 USPQ 418, 420 (CCPA 1970 (citing *In re Knapp Monarch Co.*, 296 F.2d 230, 132 USPQ 6 (CCPA 1961)). In the Response of October 9, 2007, Appellants traversed the Examiner's Official Notice, noting that, for example, calculating a predetermined client behavior score for an article based on one of the claimed types of client-side behavior data associated with the article and

arranging the article in a search result based on the predetermined client behavior score is an area of esoteric technology, and is not capable of instant and unquestionable demonstration as being well-known. (Response of October 9, 2007, at pages 16-17). Appellants respectfully submit that the Response of October 9, 2007 contained specific statements of why each of the claims rejected through use of official notice would not have been considered well-known in the art. Thus, the Examiner's unsupported assertions may not be taken as admitted prior art. Rather, the Examiner must provide specific documentary evidence to support his assertions.

*D. Conclusion*

The arguments presented herein demonstrate that claims 25, 54, and 62-105 of the present application are patentable over the prior art of record. Therefore, Appellants respectfully request that the Board reverse the Examiner's rejections of these claims.

Respectfully Submitted,  
STEPHEN LAWRENCE ET AL.

Date: July 25, 2008

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## VIII. CLAIMS APPENDIX

The claims involved in the present appeal are as follows:

25. A method comprising:
  - determining client-side behavior data associated with an article;
  - providing the client-side behavior data associated with the article to a ranking processor;
  - calculating a predetermined client behavior score for the article based at least in part on the client-side behavior data associated with the article;
  - storing the predetermined client behavior score in a data store, wherein the data store associates the predetermined client behavior score with the article;
  - receiving a search query;
  - determining that the article is associated with the search query;
  - receiving from the data store the predetermined client behavior score associated with the article;
  - arranging the article in a search result of the search query based at least in part on the predetermined client behavior score associated with the relevant article; and
  - displaying at least a part of the search result to a user.
  
54. A computer readable medium containing program code comprising:
  - program code for determining client-side behavior data associated with an article;
  - program code for providing the client-side behavior data associated with the article to a ranking processor;
  - program code for calculating a predetermined client behavior score for the article based at least in part on the client-side behavior data associated with the article;
  - program code for storing the predetermined client behavior score in a data store, wherein the data store associates the predetermined client behavior score with the article;
  - program code for receiving a search query;
  - program code for determining that the article is associated with the search query;

- program code for receiving from the data store the predetermined client behavior score associated with the article;
- program code for arranging the article in a search result of the search query based at least in part on the predetermined client behavior score associated with the relevant article; and
- program code for displaying at least a part of the search result to a user.
62. The method of claim 25, wherein the search query is an explicit search query.
63. The method of claim 25, wherein the search query is an implicit search query.
64. The method of claim 25, wherein the client-side behavior data associated with the article comprises scrolling activity data.
65. The method of claim 25, wherein the client-side behavior data associated with the article comprises printing data.
66. The method of claim 25, wherein the client-side behavior data associated with the article comprises book marking data.
67. The method of claim 25, wherein the client-side behavior data associated with the article comprises use of computer program application data.
68. The method of claim 67, wherein the use of computer program application data is used in connection with additional client-side behavior data.
69. The method of claim 68, wherein the additional client-side behavior data comprises idleness data.
70. The method of claim 68, wherein the additional client-side behavior data comprises use of computer program applications data.

71. The method of claim 25, wherein the client-side behavior data associated with the article comprises frequency of article access data.

72. The method of claim 25, wherein the client-side behavior data associated with the article comprises time of access data.

73. The method of claim 25, wherein the client-side behavior data associated with the article comprises time of access relative to the access of other associated articles data.

74. The method of claim 25, wherein the client-side behavior data associated with the article comprises forwarding data.

75. The method of claim 25, wherein the client-side behavior data associated with the article comprises copying data.

76. The method of claim 25, wherein the client-side behavior data associated with the article comprises replying data.

77. The method of claim 25, wherein the client-side behavior data associated with the article comprises mouse movement data.

78. The method of claim 25, wherein the client-side behavior data associated with the article comprises user interactions with a separate article data.

79. The method of claim 25, wherein the client-side behavior data associated with the article comprises location data.

80. The method of claim 25, further comprising determining a combined score based at least in part on client-side behavior data for multiple users.

81. The method of claim 25, further comprising determining a combined score from a plurality of types of client-side behavior data.



82. The method of claim 81, wherein creating a combined score from a plurality of types of client-side behavior data comprises using different weights for different types of behavior data or for client-side behavior data associated with different applications.

83. The computer readable medium of claim 54, wherein the search query is an explicit search query.

84. The computer readable medium of claim 54, wherein the search query is an implicit search query.

85. The computer readable medium of claim 54, wherein the client-side behavior data associated with the article comprises scrolling activity data.

86. The computer readable medium of claim 54, wherein the client-side behavior data associated with the article comprises printing data.

87. The computer readable medium of claim 54, wherein the client-side behavior data associated with the article comprises book marking data.

88. The computer readable medium of claim 54, wherein the client-side behavior data associated with the article comprises use of computer program application data.

89. The computer readable medium of claim 88, wherein the use of computer program application data is used in connection with additional client-side behavior data.

90. The computer readable medium of claim 89, wherein the additional client-side behavior data comprises idleness data.

91. The computer readable medium of claim 89, wherein the additional client-side behavior data comprises use of computer program applications data.

92. The computer readable medium of claim 54, wherein the client-side behavior data associated with the article comprises frequency of article access data.

93. The computer readable medium of claim 54, wherein the client-side behavior data associated with the article comprises time of access data.

94. The computer readable medium of claim 54, wherein the client-side behavior data associated with the article comprises time of access relative to the access of other associated articles data.

95. The computer readable medium of claim 54, wherein the client-side behavior data associated with the article comprises forwarding data.

96. The computer readable medium of claim 54, wherein the client-side behavior data associated with the article comprises copying data.

97. The computer readable medium of claim 54, wherein the client-side behavior data associated with the article comprises replying data.

98. The computer readable medium of claim 54, wherein the client-side behavior data associated with the article comprises mouse movement data.

99. The computer readable medium of claim 54, wherein the client-side behavior data associated with the article comprises user interactions with a separate article data.

100. The computer readable medium of claim 54, wherein the client-side behavior data associated with the article comprises location data.

101. The computer readable medium of claim 54, further comprising program code for determining a combined score based at least in part on client-side behavior data for multiple users.

102. The computer readable medium of claim 54, further comprising program code for determining a combined score from a plurality of types of client-side behavior data.

103. The computer readable medium of claim 102, wherein creating a combined score from a plurality of types of client-side behavior data comprises using different weights for different types of behavior data or for client-side behavior data associated with different applications.

104. A method to order a set of articles, comprising:  
determining client-side behavior data associated with an article;  
providing the client-side behavior data associated with the article to a ranking processor;  
calculating a predetermined client behavior score for the article based at least in part on the client-side behavior data associated with the article;  
storing the predetermined client behavior score in a data store, wherein the data store associates the predetermined client behavior score with the article;  
determining a set of relevant articles relevant to a query signal, the set of relevant articles including the article;  
receiving from the data store the predetermined client behavior score associated with the article;  
arranging the set of relevant articles in an order based at least in part on the predetermined client behavior score associated with the article; and  
displaying at least a part of the set of relevant articles to a user in the order.

105. A method to order search results, comprising:  
determining client-side behavior data associated with an article stored in a client device;  
providing the client-side behavior data associated with the article to a ranking processor;  
calculating a predetermined client behavior score for the article based at least in part on the client-side behavior data associated with the article;

storing the predetermined client behavior score in a data store in the client device,  
wherein the data store associates the predetermined client behavior score with  
the article;  
receiving a search query;  
determining that the article is associated with the search query;  
receiving from the data store the predetermined client behavior score associated with  
the article;  
arranging the article in a search result of the search query in an order based at least in  
part on the predetermined client behavior score associated with the article; and  
displaying at least a part of the search result to a user in the order.

**IX. EVIDENCE APPENDIX**

No evidence of the types described in 37 CFR § 41.37(c)(1)(ix) has been submitted during prosecution of the present application.

**X. RELATED PROCEEDINGS APPENDIX**

As indicated in Section II, to the best knowledge of the Appellants and the Appellants' legal representative, there are no decisions rendered by a court or the Board that may directly affect, be affected by, or have a bearing on the decision of the Board in the present appeal.